

I-Chao Shen

jdilyshen@gmail.com

<https://jdily.github.io>

Research Interests

Computer graphics, vector graphics, data-driven 2D/3D geometry analysis and processing, machine learning.

Education

National Taiwan University <i>Ph.D. in Computer Science</i> Advisor: Bing-Yu Chen. Thesis: 2D Visual Content Design Driven by Human-Guided Optimization	Taipei, Taiwan <i>Sep 2017 - Dec. 2020</i>
---	--

National Taiwan University <i>Master in Information Management and MBA</i> Advisor: Bing-Yu Chen. Thesis: Perspective-aware Warping for Seamless Stereoscopic Image Cloning	Taipei, Taiwan <i>Sep 2009 - June 2011</i>
---	--

National Taiwan University <i>Bachelor in Information Management</i>	Taipei, Taiwan <i>Sep 2005 - June 2009</i>
--	--

Experiences

Postdoctoral researcher - JSPS Foreign Researchers Fellowship , Tokyo, Japan Host : Takeo Igarashi	<i>Dec. 2020 -</i>
--	--------------------

Research Visitor - JST CREST Project , Tokyo, Japan Supervisor : Takeo Igarashi	<i>Feb 2018 - July 2018, Aug 2019</i>
---	---------------------------------------

Research Assistant - CMLab, National Taiwan University , Taipei, Taiwan Supervisor : Bing-Yu Chen	<i>Apr 2017 - July 2017</i>
---	-----------------------------

Research Assistant - Imager Lab, The University of British Columbia , Vancouver, Canada Supervisor : Alla Sheffer	<i>Sep 2014 - Mar 2017</i>
--	----------------------------

Research Intern - Imagination Lab, Adobe Research , San Jose, CA Supervisor : Nathan Carr, Duygu Ceylan, Zhaowen Wang	<i>May 2015 - Aug 2015</i>
---	----------------------------

Research Assistant - CITI, Academia Sinica , Taipei, Taiwan Supervisor : Wen-Huang Cheng	<i>Sep 2011 - July 2014</i>
--	-----------------------------

Publications

ODEN: Live Programming for Neural Network Architecture Editing Chunqi Zhao, I-Chao Shen, Tsukasa Fukusato, Jun Kato, Takeo Igarashi to appear in ACM Intelligent User Interfaces (IUI) 2022
--

Per Garment Capture and Synthesis for Real-time Virtual Try-on Toby Chong, I-Chao Shen, Nobuyuki Umetani, Takeo Igarashi in proceeding of User Interface Software and Technology (UIST) 2021

Data-driven Sketch Beautification with Neural Feature Representation I-Chao Shen IEEE Computer Graphics and Applications (CG&A) 2021

ClipGen: A Deep Generative Model for Clipart Vectorization and Synthesis

I-Chao Shen, Bing-Yu Chen

IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021

Multi-Resolution Shared Representative Filtering for Real-Time Depth Completion

Yu-Ting Wu, Tzu-Mao Li, I-Chao Shen, Hong-Shiang Lin, Yung-Yu Chuang

High-Performance Graphics (HPG) 2021

ClipFlip : Multi-view Clipart Design

I-Chao Shen, Kuan-Hung Liu, Li-Wen Su, Yu-Ting Wu, and Bing-Yu Chen

Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:2008.12933 [cs.GR]

Interactive Optimization of Generative Image Modeling using Sequential Subspace Search and Content-based Guidance

Toby Chong Long Hin*, I-Chao Shen*, Issei Sato, and Takeo Igarashi (*: joint first authors)

Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:1906.09840 [cs.GR]

ZomeFab: Cost-effective Hybrid Fabrication with Zometools

I-Chao Shen, Ming-Shiuan Chen, Chun-Kai Huang, and Bing-Yu Chen

Computer Graphics Forum, Volume 39, Issue 1, Feb 2020

Director-360: Introducing Camera Handling to 360 Cameras

Hao-Juan Huang, I-Chao Shen, and Liwei Chan

in proceeding of MobileHCI 2020

Perception-Driven Semi-Structured Boundary Vectorization

Shayan Hoshyari, Edoardo Dominici, Alla Sheffer, Nathan Carr, Duygu Ceylan, Zhaowen Wang, I-Chao Shen

ACM Transactions on Graphics (Proceedings of SIGGRAPH 2018).

High-resolution 360 Video Foveated Stitching for Real-time VR

Wei-Tse Lee*, Hsin-I Chen*, Ming-Shiuan Chen, I-Chao Shen and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2017)

A Scalable Active Framework for Region Annotation in 3D Shape Collections

Li Yi, Vladimir G. Kim, Duygu Ceylan, I-Chao Shen, Mengyan Yan, Hao Su, Cewu Lu, Qixing Huang, Alla Sheffer, and Leonidas Guibas

ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2016)

Retargeting 3D Objects and Scenes with a General Framework

Chun-Kai Huang, Yi-Ling Chen, I-Chao Shen, and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2016)

Data-driven Handwriting Synthesis in a Conjoined Manner

Hsin-Yi Chen, Tse-Ju Lin, I-Chao Shen, and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2015)

Gestalt Rule Feature Points

I-Chao Shen and Wen-Huang Cheng

IEEE Transactions on Multimedia (TMM), 17(4), pp. 526-537, 2015

Geometrically Consistent Stereoscopic Image Editing using Patch-based Synthesis

Sheng-Jie Luo, Ying-Tse Sun, I-Chao Shen, Bing-Yu Chen, and Yung-Yu Chuang

IEEE Transactions on Visualization and Computer Graphics (TVCG), 21(1), pp. 56-67, 2015

Stroke-guided Image Synthesis for Skeletal Structure Editing

Sheng-Jie Luo, Chin-Yu Lin, I-Chao Shen, and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2013)

Perspective-Aware Warping for Seamless Stereoscopic Image Cloning

Sheng-Jie Luo, I-Chao Shen, Bing-Yu Chen, Wen-Huang Cheng, and Yung-Yu Chuang

ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2012).

Technical Reports and Preprints

AutoPoly: Predicting a Polygonal Mesh Construction Sequence from a Silhouette Image

I-Chao Shen, Yu Ju Chen, Oliver van Kaick, Takeo Igarashi

arxiv preprint ([arxiv:2203.15233](https://arxiv.org/abs/2203.15233))

StylePart: Image-based Shape Part Manipulation

I-Chao Shen, Li-Wen Su, Yu-Ting Wu, Bing-Yu Chen

arxiv preprint ([arxiv:2111.10520](https://arxiv.org/abs/2111.10520))

Accurate Anatomy Transfer using Medical Imaging

I-Chao Shen, Li-An Chung, Bing-Yu Chen

submitted to journal of Computer Graphics Technique

Workshop Papers, Short Papers, Posters

Guided Image Weathering using Image-to-Image Translation

Li-Yu Chen, I-Chao Shen, and Bing-Yu Chen

SIGGRAPH ASIA 2021 Technical Communication

Real-time Image-based Virtual Try-on with Measurement Garment

Toby Chong, I-Chao Shen, Yunfei Qian, Nobuyuki Umetani, Takeo Igarashi

SIGGRAPH ASIA 2021 Emerging Technologies

Transferring Deep Reinforcement Learning with Adversarial Objective and Augmentation

I-Chao Shen, Shu-Hsuan Hsu, and Bing-Yu Chen

IJCAI-PRICAI 2020 Workshop on Knowledge-Based Reinforcement Learning (KBRL)

Large-scale fabrication with interior zometool structure

Ming-Shiuan Chen, I-Chao Shen, Chun-Kai Huang, and Bing-Yu Chen

ACM SIGGRAPH Poster Program 2018

A Deep Learning Based Method For 3D Human Pose Estimation From 2D Fisheye Images

Ching-Chun Chen, Chia-Min Wu, I-Chao Shen, and Bing-Yu Chen.

ACM IUI Poster Program 2018

Retargeting 3D objects and scenes

Chun-Kai Huang, Yi-Ling Chen, I-Chao Shen, and Bing-Yu Chen

ACM SIGGRAPH Poster Program 2015

Painting Photolization

Chien-Wen Jung, I-Chao Shen, Sheng-Jie Luo, Bing-Yu Chen, and Wen-Huang Cheng

ACM SIGGRAPH ASIA Poster Program 2013

Texturing and Deforming Meshes with Casual Images

I-Chao Shen, Yi-Hua Wang, Yu-Mei Chen, Bing-Yu Chen, and Wen-Huang Cheng

ACM SIGGRAPH ASIA Poster Program 2012

User-Assisted Disparity Maps

Hsin-Yi Chen, Yi-Shan Lin, I-Chao Shen, Sheng-Jie Luo, Wen-Huang Cheng and Bing-Yu Chen

Pacific Graphics 2012 short paper

MusicSpace: You “Play” The Music

Chun-Yu Tsai, Hung-Jung Lin, Tzu-Hao Kuo, Kai-Yin Cheng, I-Chao Shen, Bing-Yu Chen, and Rung-Huei Liang

ACM SIGGRAPH Poster Program 2010

Patent

Smoothing images using machine learning

Nathan A Carr, Zhaowen Wang, Duygu Ceylan, I-Chao Shen

| United States Patent, No. 9799102, issued October 24, 2017.

Awards and Grants

IPPR Best Ph.D. dissertation award, Honorable mention	2021
AIP Challenge Researcher, Japan Science and Technology Agency (JST), Japan,	2021 - 2022
JSPS Grant-in-Aid for Scientific Research for JPSP foreign fellow, Japan,	2021 - 2023
JSPS Postdoctoral Fellowship for Foreign Researchers	2020 -
MediaTek Fellowship	2017 - 2020

Invited Talks

2D Visual Content Design Driven by Human-Guided Optimization, <i>The University of Tokyo</i>	Apr. 2021
Per Garment Capture and Synthesis for Real-time Virtual Try-on, <i>JST CREST 8th Research Area Meeting</i>	Sep. 2021

Media

Per Garment Capture and Synthesis for Real-time Virtual Try-on	2021, 2022
- BS フジ - ガリレオ X 第 259 回「現 \mathbb{R} 空間 \times \mathbb{R} 想空間二つの世界を重ねる最新技術」(JP)	
- JST News	
- NIKKEI (JP)	
- ZAIKEI (JP)	
- TechCrunch Japan (JP)	
- Tii 技術情報 (JP)	
- Independent TV (UK)	

Professional Services

- **Reviewer:**
 - SIGGRAPH, SIGGRAPH ASIA
 - Eurographics
 - CHI
 - Pacific Graphics
 - CAD/Graphics
 - Transaction on Multimedia
 - VRST
 - WACV